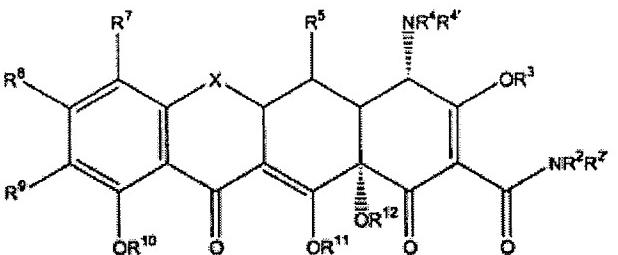


AMENDMENTS TO THE CLAIMS:

Listing of Claims:

This listing of claims will replace all prior versions of the claims and listing of the claims in the application:

1. **(Currently Amended)** A substituted tetracycline compound, wherein said compound is of the formula:



(I)

wherein:

X is $\text{CHC}(\text{R}^{13}\text{Y'})\text{Y}$, CR^6R^6 , S, NR⁶, or O;

R² is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R⁴ and R^{4'} are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R², R³, R¹⁰, R¹¹ and R¹² are each hydrogen or a pro-drug moiety;

R⁵ is hydrogen[[,]] or hydroxyl, or a prodrug moiety;

R⁶[[,]] and R^{6'}, and R⁸ are each independently hydrogen[[,]] or alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R⁷ is hydrogen, or NR^{7c}C(=W')WR^{7a};

R⁸ is hydrogen;

R¹³ is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano; sulfhydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R⁹ is hydrogen[[,]] or NR^{9c}C(=Z')ZR^{9a};

Z is O;

Z' is O or S;

R^{9a} is unsubstituted C₃-C₁₀ alkyl, t-butyl, n-butyl, i-butyl, n-pentyl, substituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alcoxycarbonyl, substituted or unsubstituted arylcarbonyl, or substituted or unsubstituted arylphenyl,

wherein said substituted alkyl is substituted with halogen, amino, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxyacarbonylamino, alkoxyacarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxyacarbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

further wherein said substituted alkenyl, substituted alkynyl, substituted alkoxy, substituted arylsulfonyl, substituted alkoxyacarbonyl, substituted arylcarbonyl, or substituted arylphenyl is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxyacarbonylamino, alkoxyacarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxyacarbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxyacarbonyl, arylcarbonyl, alkylamino, arylalkyl, aryl, heterocyclic or heteroaromatic;

W is CR^{7d}R^{7e}, NR^{7b} or O;

W' is O or S;

R^{7a}, R^{7b}, R^{7c}, R^{7d}, and R^{7e} are each independently hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, arylsulfonyl, alkoxyacarbonyl, arylcarbonyl, alkylamino, arylalkyl, arylphenyl[[,]] or heterocyclic, heteroaromatic, absent, or a prodrug moiety, and R^{7d} and R^{7e} may be linked to form a ring;

and/or a pharmaceutically acceptable salt thereof, provided that R⁹ is not hydrogen when R⁷ is hydrogen.

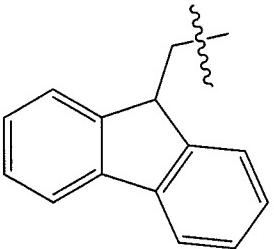
2. (Canceled)

3. (Canceled)

4. (Currently Amended) The compound of claim 3~~claim 1~~, wherein R⁴ and R^{4'} are each methyl.

5. **(Canceled)**
6. **(Original)** The compound of claim 4, wherein R⁵ is hydrogen.
7. **(Original)** The compound of claim 6, wherein X is CH₂, and R⁷ is hydrogen.
8. **(Canceled)**
9. **(Previously Presented)** The compound of claim 4, wherein R⁵ is hydroxyl and X is CHR⁶.
10. **(Previously Presented)** The compound of claim 9, wherein R⁶ is CH₃.
11. **(Original)** The compound of claim 1, wherein R⁹ is NR^{9c}C(=Z')ZR^{9a}.
12. **(Canceled)**
13. **(Original)** The compound of claim 11, wherein Z' is oxygen.
14. **(Withdrawn)** The compound of claim 11, wherein Z' is sulfur.
- 15-18. **(Canceled)**
19. **(Currently Amended)** The compound of claim 11, wherein R^{9a} is selected from the group consisting of substituted alkyl, substituted or unsubstituted alkynyl, or substituted or unsubstituted arylphenyl.
20. **(Canceled)**
21. **(Previously Presented)** The compound of claim 19, wherein said substituted alkyl is substituted with one or more substituents selected from the group consisting of alkoxy carbonyl, amino, aryl carbonyl, halogen, hydroxy, alkylamino, alkoxy, or aryl.
22. **(Canceled)**
23. **(Previously Presented)** The compound of claim 19, wherein said substituted alkyl is substituted with an aryl group.
24. **(Original)** The compound of claim 23, wherein said aryl group is phenyl.
25. **(Withdrawn)** The compound of claim 19, wherein said substituted alkyl is substituted with one or more halogens.
26. **(Withdrawn)** The compound of claim 25, wherein said halogen is bromine.
- 27-29. **(Canceled)**
30. **(Withdrawn, Currently Amended)** The compound of claim 1, wherein R^{9a} is substituted or unsubstituted arylphenyl.
31. **(Canceled)**

32. **(Previously Presented)** The compound of claim 23, wherein said substituted alkyl group is:



33. **(Canceled)**

34. **(Withdrawn, Currently Amended)** The compound of claim 33claim 30, wherein said phenyl is substituted with one or more substituents selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, alkoxy, aryloxy, alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, aryloxycarbonyl, amido, halogen, nitro, azo, alkyl sulfonyl, and arylsulfonyl.

35. **(Withdrawn)** The compound of claim 34, wherein said substituent is alkyl.

36. **(Withdrawn)** The compound of claim 35, wherein said alkyl is unsubstituted.

37. **(Withdrawn)** The compound of claim 35, wherein said alkyl is methyl.

38. **(Withdrawn)** The compound of claim 35, wherein said alkyl is substituted with one or more halogens.

39. **(Withdrawn)** The compound of claim 34, wherein said substituent is alkoxy and further wherein said alkoxy is methoxy.

40. **(Withdrawn)** The compound of claim 34, wherein said substituent is selected from the group consisting of alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, aryloxycarbonyl, and amido.

41-55. **(Canceled)**

56. **(Withdrawn)** The compound of claim 1, wherein R⁷ is NR^{7c}C(=W')WR^{7a}.

57. **(Withdrawn)** The compound of claim 56, wherein R⁹ is hydrogen.

58. **(Withdrawn)** The compound of claim 57 wherein R^{7c} is hydrogen.

59. **(Withdrawn)** The compound of claim 57, wherein W' is O.

60. **(Withdrawn)** The compound of claim 57, wherein W' is S.

61. **(Withdrawn)** The compound of claims 59 or 60, wherein W is NR^{7b}.

62. **(Withdrawn)** The compound of claims 59 or 60, wherein W is O.

63. **(Withdrawn, Currently Amended)** The compound of claim 57, wherein R^{7a} is selected from the group consisting of alkyl, alkenyl, alkynyl[[,]] and phenyl-aryl, arylalkyl, and heteroaromatic.

64. **(Withdrawn)** The compound of claim 63, wherein R^{7a} is substituted or unsubstituted alkyl.

65. **(Withdrawn)** The compound of claim 64, wherein said alkyl is substituted with an aryl group.

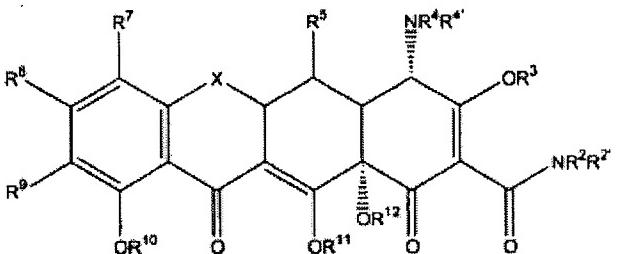
66. **(Canceled)**

67. **(Withdrawn, Currently Amended)** The compound of ~~claim 66~~claim 63, wherein said phenyl is substituted with one or more substituents selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, alkoxy, aryloxy, alkylcarbonyl, arylcarbonyl, alkoxycarbonyl, aryloxycarbonyl, amido, halogen, nitro, azo, alkyl sulfonyl, and arylsulfonyl.

68. **(Withdrawn)** The compound of claim 67, wherein said substituent is alkyl, alkoxy, or nitro.

69-81. **(Canceled)**

82. **(Currently Amended)** A pharmaceutical composition comprising a therapeutically effective amount of a substituted tetracycline compound and a pharmaceutically acceptable carrier, wherein said substituted tetracycline is of the formula:



(I)

wherein:

X is CHC(R¹³Y,Y), CR⁶R⁶, S, NR⁶, or O;

R² is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R⁴ and R^{4'} are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R², R³, R¹⁰, R¹¹ and R¹² are each hydrogen or a pro-drug moiety;

R⁵ is hydrogen[[,]] or hydroxyl, or a prodrug moiety;

R⁶[,] and R^{6'}, and R⁸ are each independently hydrogen[[,]] or alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R⁷ is hydrogen or NR^{7c}C(=W')WR^{7a};

R⁸ is hydrogen;

R¹³ is hydrogen, hydroxy, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulphydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R⁹ is hydrogen[[,]] or NR^{9c}C(=Z')ZR^{9a};

Z is O;

Z' is O or S;

R^{9a} is unsubstituted C₃-C₁₀-alkyl, t-butyl, n-butyl, i-butyl, n-pentyl, substituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alkoxy carbonyl, substituted or unsubstituted aryl carbonyl, or substituted or unsubstituted aryl phenyl;

wherein said substituted alkyl is substituted with halogen, amino, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxy carbonylamino, alkoxy carbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulphydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

further wherein said substituted alkenyl, substituted alkynyl, substituted alkoxy, substituted arylsulfonyl, substituted alkoxy carbonyl, substituted aryl carbonyl, or substituted aryl phenyl is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxy carbonylamino, alkoxy carbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulphydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxy carbonyl, aryl carbonyl, alkylamino, arylalkyl, aryl, heterocyclic or heteroaromatic;

W is CR^{7d}R^{7e}, NR^{7b} or O;

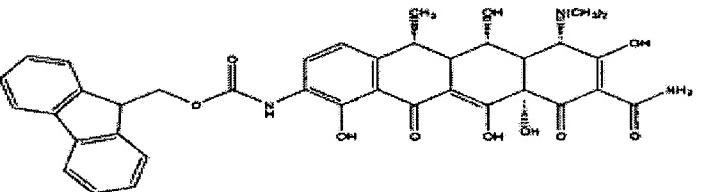
W' is O or S;

R^{7a}, R^{7b}, R^{7c}, R^{7d}, and R^{7e} are each independently hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, arylsulfonyl, alkoxy carbonyl, aryl carbonyl, alkylamino, arylalkyl, arylphenyl[[,] or heterocyclic, heteroaromatic, absent, or a prodrug moiety, and R^{7d} and R^{7e} may be linked to form a ring;

and/or a pharmaceutically acceptable salt thereof, provided that R⁹ is not hydrogen when R⁷ is hydrogen.

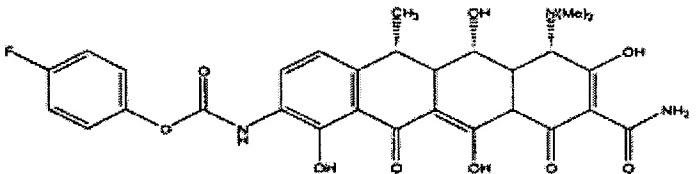
83-102. (Cancelled)

103. (Previously Presented) The compound of claim 1, wherein said compound is



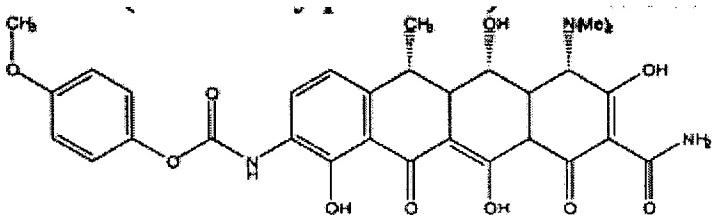
or a pharmaceutically acceptable salt thereof.

104. (Withdrawn) The compound of claim 1, wherein said compound is



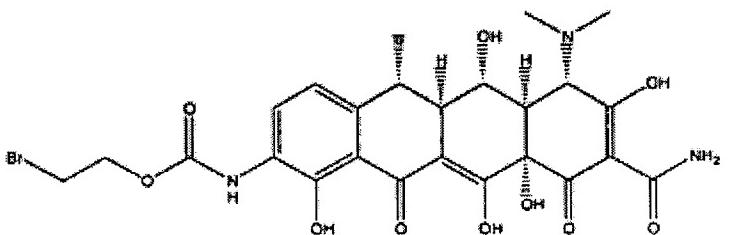
or a pharmaceutically acceptable salt thereof.

105. (Withdrawn) The compound of claim 1, wherein said compound is



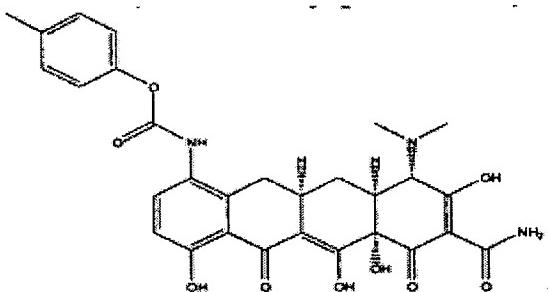
or a pharmaceutically acceptable salt thereof.

106. (Withdrawn) The compound of claim 1, wherein said compound is



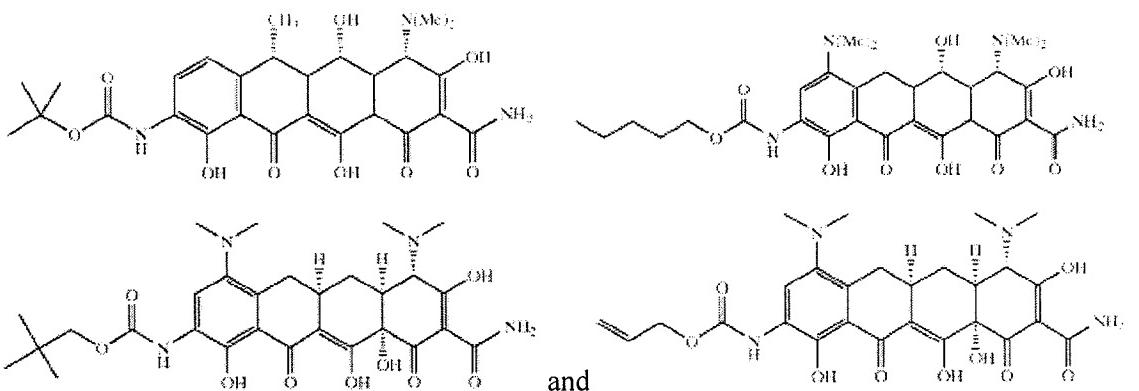
or a pharmaceutically acceptable salt thereof.

107. **(Withdrawn)** The compound of claim 1, wherein said compound is



or a pharmaceutically acceptable salt thereof.

108. **(Withdrawn)** A substituted tetracycline compound, wherein said compound is selected from the group consisting of



or a pharmaceutically acceptable salt thereof.

109. **(Previously Presented)** The compound of claim 1, wherein said compound is doxycycline 9-carbamic acid 9H-fluoren-9-yl methyl ester or a pharmaceutically acceptable salt thereof.

110. **(Previously Presented)** The compound of claim 1, wherein said compound is FMOC 9-amino doxycycline or a pharmaceutically acceptable salt thereof.

111. **(Withdrawn)** The compound of claim 1, wherein said compound is 9-(4'-fluorophenyl) doxycycline carbamate or a pharmaceutically acceptable salt thereof.
112. **(Withdrawn)** The compound of claim 1, wherein said compound is 9-(4'-methoxyphenyl) doxycycline carbamate or a pharmaceutically acceptable salt thereof.
- 113-116. **(Canceled)**
117. **(Withdrawn)** The compound of claim 1, wherein said compound is 9-(2'-bromoethyl) doxycycline carbamate or a pharmaceutically acceptable salt thereof.
118. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(4'-methylphenyl) sencycline carbamate or a pharmaceutically acceptable salt thereof.
119. **(Withdrawn)** The compound of claim 1, wherein said compound is doxycycline 7-carbamic acid 7H-fluoren-7-yl methyl ester or a pharmaceutically acceptable salt thereof.
120. **(Withdrawn)** The compound of claim 1, wherein said compound is 7- (naphthyn-1-yl) doxycycline urea or a pharmaceutically acceptable salt thereof.
121. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(3- methyl-1 -butyl) doxycycline urea or a pharmaceutically acceptable salt thereof.
122. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-phenyl doxycycline urea or a pharmaceutically acceptable salt thereof.
123. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-t-butyl doxycycline urea or a pharmaceutically acceptable salt thereof.
124. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-Fmoc amino doxycycline or a pharmaceutically acceptable salt thereof.
125. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(4'- chloro-2-trifluoromethylphenyl) doxycycline urea or a pharmaceutically acceptable salt thereof.
126. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(4'-fluorophenyl) doxycycline carbamate or a pharmaceutically acceptable salt thereof.
127. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(4'-methoxyphenyl) doxycycline carbamate or a pharmaceutically acceptable salt thereof.
128. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-BOC amino doxycycline or a pharmaceutically acceptable salt thereof.
129. **(Withdrawn)** The compound of claim 1, wherein said compound is 7- (naphthyn-1-yl) doxycycline thiourea 5-propanoic acid ester or a pharmaceutically acceptable salt thereof.
130. **(Withdrawn)** The compound of claim 1, wherein said compound is doxycycline 7-thiocarbamic acid 7H-fluoren-7-yl methyl ester or a pharmaceutically acceptable salt thereof.

131. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(naphthyn-1-yl) doxycycline thiourea or a pharmaceutically acceptable salt thereof.

132. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(3-methyl-1-butyl) doxycycline thiourea or a pharmaceutically acceptable salt thereof.

133. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-phenyl amino doxycycline thiourea or a pharmaceutically acceptable salt thereof.

134. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-t-butyl amino doxycycline thiourea or a pharmaceutically acceptable salt thereof.

135. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(4'-chloro-2'-trifluoromethylphenyl) doxycycline thiourea or a pharmaceutically acceptable salt thereof.

136. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(4'-fluorophenyl) doxycycline thiocarbamate or a pharmaceutically acceptable salt thereof.

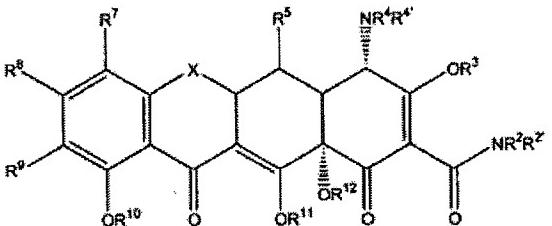
137. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(4'-methoxyphenyl) doxycycline thiocarbamate or a pharmaceutically acceptable salt thereof.

138. **(Withdrawn)** The compound of claim 1, wherein said compound is 7-(naphthyn-1-yl) doxycycline urea 5-propanoic acid ester or a pharmaceutically acceptable salt thereof.

139. **(Withdrawn)** A tetracycline compound, wherein said compound is selected from the group consisting of:

9-neopentyl minocycline carbamate;
9-BOC amino doxycycline;
9-(n-pentyl) minocycline carbamate;
9-BOC amino minocycline carbamate;
9-(n-pentyl) minocycline carbamate;
9-prop-2'-enyl minocycline carbamate;
9-ethyl minocycline carbamate;
9-n-butyl minocycline carbamate
9-n-but-3-enyl minocycline carbamate; and
9-i-butyl minocycline carbamate; or a pharmaceutically acceptable salt thereof.

140. **(Withdrawn)** A substituted tetracycline compound, wherein said compound is of the formula:



(I)

wherein:

X is $\text{CHC}(\text{R}^{13}\text{Y}'\text{Y})\text{CR}^6\text{R}^6\text{S}$, NR^6 , or O;

R^2 is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^4 and $\text{R}^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

$\text{R}^{2'}, \text{R}^3, \text{R}^{10}, \text{R}^{11}$ and R^{12} are each hydrogen or a pro-drug moiety;

R^5 is hydrogen, hydroxyl, or a prodrug moiety;

R^6, R^6 , and R^8 are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R^7 is dialkylamino;

R^8 is hydrogen;

R^{13} is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulphydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R^9 is $\text{NR}^{9a}\text{C}(=\text{Z}')\text{ZR}^{9a}$;

Z is O;

Z' is O or S;

R^{9a} is unsubstituted or substituted C₅-C₁₀ alkyl, substituted or unsubstituted C₄-C₁₀ alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alkoxy carbonyl, substituted or unsubstituted aryl carbonyl, or substituted or unsubstituted aryl,

wherein said substituted C₅-C₁₀ alkyl is substituted with halogen, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxy carbonylamino, alkoxy carbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulphydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

further wherein said substituted C₄-C₁₀ alkenyl, substituted alkynyl, substituted alkoxy, substituted arylsulfonyl, substituted alkoxy carbonyl, substituted aryl carbonyl, or substituted aryl is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxy carbonylamino,

alkoxycarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulphydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl; and

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxy carbonyl, arylcarbonyl, alkylamino, arylalkyl, aryl, heterocyclic or heteroaromatic; and pharmaceutically acceptable salts thereof.

141. **(Withdrawn)** The compound of claim 140, wherein R², R^{2'}, R³, R¹⁰, R¹¹, and R¹² are each hydrogen.

142. **(Withdrawn)** The compound of claim 140, wherein R⁴ and R^{4'} are each methyl.

143. **(Withdrawn)** The compound of claim 140, wherein R⁵ is hydrogen.

144. **(Canceled)**

145. **(Withdrawn)** The compound of claim 140, wherein R^{9c} is hydrogen.

146. **(Withdrawn)** The compound of claim 140, wherein Z' is O.

147. **(Withdrawn)** The compound of claim 140, wherein Z' is S.

148. **(Canceled)**

149. **(Withdrawn)** The compound of claim 140, wherein R^{9a} is substituted C₅-C₁₀ alkyl, substituted or unsubstituted alkynyl, or substituted or unsubstituted aryl.

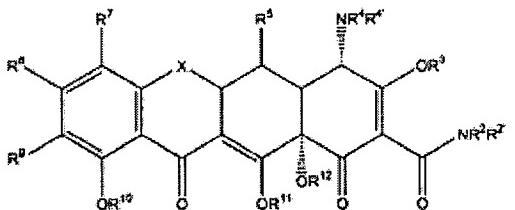
150. **(Withdrawn)** The compound of claim 149, wherein said substituted C₅-C₁₀ alkyl is substituted with one or more substituents selected from the group consisting of alkoxy carbonyl, arylcarbonyl, halogen, hydroxyl, alkoxy, or aryl.

151. **(Withdrawn)** The compound of claim 140, wherein R^{9a} is substituted or unsubstituted aryl.

152. **(Withdrawn)** The compound of claim 151, wherein said substituted or unsubstituted aryl is phenyl.

153. **(Withdrawn)** The compound of claim 152, wherein said phenyl is substituted with one or more substituents selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, alkoxy, aryloxy, alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, aryloxycarbonyl, amido, halogen, nitro, azo, alkyl sulfonyl, and arylsulfonyl.

154. **(Withdrawn)** A pharmaceutical composition comprising a therapeutically effective amount of a substituted tetracycline compound and a pharmaceutically acceptable carrier, wherein said substituted tetracycline is of the formula:



(I)

wherein:

X is $\text{CHC}(\text{R}^{13}\text{Y'Y})$, $\text{CR}^{6'}\text{R}^6$, S, NR^6 , or O;

R^2 is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^4 and $\text{R}^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

$\text{R}^{2'}$, R^3 , R^{10} , R^{11} and R^{12} and are each hydrogen or a pro-drug moiety;

R^5 is hydrogen, hydroxyl, or a prodrug moiety;

R^6 , $\text{R}^{6'}$, and R^8 are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R^7 is dialkylamino;

R^8 is hydrogen;

R^{13} is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulfhydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R^9 is $\text{NR}^{9c}\text{C}(=\text{Z}')\text{ZR}^{9a}$;

Z is O;

Z' is O or S;

R^{9a} is unsubstituted or substituted C₅-C₁₀ alkyl, substituted or unsubstituted C₄-C₁₀ alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alkoxy carbonyl, substituted or unsubstituted aryl carbonyl, or substituted or unsubstituted aryl,

wherein said substituted C₅-C₁₀ alkyl is substituted with halogen, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxy carbonylamino, alkoxy carbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl,

arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulphydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

further wherein said substituted C₄-C₁₀ alkenyl, substituted alkynyl, substituted alkoxy, substituted arylsulfonyl, substituted alkoxy carbonyl, substituted arylcarbonyl, or substituted aryl is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxy carbonylamino, alkoxy carbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulphydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl; and

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxy carbonyl, arylcarbonyl, alkylamino, arylalkyl, aryl, heterocyclic or heteroaromatic; and pharmaceutically acceptable salts thereof.

155. **(Withdrawn)** The compound of claim 140, wherein said compound is minocycline 9-carbamic acid 9H-fluoren-9-yl methyl ester or a pharmaceutically acceptable salt thereof.

156. **(Withdrawn)** The compound of claim 140, wherein said compound is FMOC 9-amino minocycline or a pharmaceutically acceptable salt thereof.

157. **(Withdrawn)** The compound of claim 140, wherein said compound is 9-(4'-fluorophenyl) minocycline carbamate or a pharmaceutically acceptable salt thereof.

158. **(Withdrawn)** The compound of claim 140, wherein said compound is 9-(4'-Methoxyphenyl) minocycline carbamate or a pharmaceutically acceptable salt thereof.